



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,565	09/29/2003	Yoichi Kodama	1034232-000025	4272
21839 7590 07/14/2008 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
HAIDER, SAIRA BANO				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
07/14/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/671,565

Applicant(s)

KODAMA ET AL.

Examiner

SAIRA HAIDER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/28/2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3, 4, and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added limitation to claim 1 which specifies that the metal laminate has a solder heat resistance of not less than 300°C is not supported by applicant's specification. It is noted that applicant's specification states that the instant invention improves the solder heat resistance by about 20°C or more from those of conventional techniques, wherein applicant identifies conventional techniques as having a solder heat resistance of 260°C or less (page 25). From this disclose it cannot be definitely determined that the claimed metal laminate has a solder heat resistance of not less than 300°C. It is noted that in Table 2 of applicant's specification, certain points (300°C, 320°C, 350°C, and 360°C) in the claimed range are supported for specific embodiments, however, the entire

claimed range is not supported (values greater than 360°C). Accordingly, the disclosure and examples provided by applicant are insufficient to support the entire claimed range.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 3, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaya et al. in view of Matsuura et al. (US 5,508,357), and in further view of Arai et al. (US 6,054,509).
6. Yamaya discloses thermosetting resin compositions comprising a polyimide and a bismaleimide, wherein the resins exhibit excellent heat resistance properties. Specifically, Yamaya discloses the claimed bismaleimide with the meta-position substitution (Formula (III)) and the claimed polyimide (Formula (I) (col.2, lines 44-69; col. 4, lines 60-61, Table 1 (Examples 9-17)).
7. Yamaya fails to disclose that the thermosetting resin composition is present in a laminate composite comprising a metal foil layer and a polyimide layer, as claimed. However, Yamaya discloses that the thermosetting resin compositions are excellent in adhesion, formability, moldability, flexibility and heat resistance. Further, the resin compositions have numerous applications including as adhesives, laminates and molding materials in electrical and electronic equipment and apparatus (col. 6, lines 14-20). Attention is directed towards the Matsuura reference.
8. Matsuura teaches similar polyimide/bismaleimide thermosetting compositions, where the materials are applied to metal foils and as adhesives between polyimide films and metal foils (col. 11 lines 51-62; col. 12 lines 34-63). The articles are formed to provide substrates for flexible printed circuit boards or TAB tapes. It is the examiner's position that it would have been prima facie obvious to use the polyimide/bismaleimide compositions of Yamaya's invention applied to metal foils or between polyimide films and metal foils to form substrates for flexible printed circuit boards

or TAB tapes having Yamaya's improved toughness, flexibility, adhesion, and heat resistance properties. The position is supported by the fact that the resin of Yamaya is exemplified as capable of bonding to steel sheets (col. 7, line 31 to col. 8, line 2).

9. Regarding the limitations drawn to the polyimide, Yamaya teaches polyimides fitting the claimed formulas (1) and (4) (col. 1 line 54-col. 2 line 30; examples).

10. In reference to the limitation regarding the metal foils, Matsuura discloses copper foil and aluminum foil as suitable metal foils; however, Matsuura fails to disclose the claimed rolled copper foil or electrolytic copper foil as suitable. Thus attention is directed towards the Arai reference, which discloses that the metal foil of flexible printed circuit boards can be selected from a variety of metal foils including electrolytic copper foils, rolled copper foils, and aluminum foils. Wherein the electrolytic and rolled copper foils are most widely employed as metal foils in respect of their good flexibility and high electric conductivity (col. 4, lines 22-33). Therefore, given that the electrolytic copper foils and rolled copper foils are advantageous over aluminum foils, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize either electrolytic copper foils or rolled copper foils as the metal foil in the invention taught by the combination of Yamaya and Matsuura.

11. In reference to the claim 7, Arai discloses that the thickness of the metal foil is usually 18 to 70 μm (col. 4, lines 22-33). It would have been obvious to use the either electrolytic copper foils and rolled copper foils in the thickness specified by Arai in order to fully embody the invention taught by the combination of Yamaya, Matsuura, and Arai.

12. In reference to the limitation regarding the metal laminate is used as a based material for a chip-on-film or flexible substrate, the combination of references teaches this limitation. Specifically, the examiner has stated in the rejection above, that it would have been prima facie obvious to use

the polyimide/bismaleimide compositions of Yamaya's invention applied to metal foils or between polyimide films and metal foils to form substrates for flexible printed circuit boards or TAB tapes having Yamaya's improved properties.

13. In reference to the newly added limitation specifying that the metal laminate has a solder heat resistance of not less than 300°C, it is noted that since the combination of prior art references teach the identical chemical structures, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Note, that because the references do not expressly teach or address the properties of the claimed invention, it does not mean that the properties are not inherently disclosed. Teaching the same compound(s) inherently discloses the corresponding properties. The references cannot possibly teach or address all of the properties, but implicitly all of the properties are present.

14. Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, as done above, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on 'inherency' under 35 U.S.C. 102, on 'prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Response to Arguments

15. The examiner has thoroughly considered the newly added limitation and has presented a *prima facie* case of obviousness.

16. In response to applicant's argument that the cited prior art fails to recognize the results obtained by the claimed invention, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

17. It is noted that, as per MPEP § 2112, there is no requirement that the person of ordinary skill in the art would have recognize the inherent disclosure (solder heat resistance value) at the time of the invention, but only that the subject matter is in fact inherent in the prior art reference. As noted in the rejection above, since the prior art compounds comprising the metal laminate are identical to those claimed, the solder heat resistance property claimed is necessarily present in the compound taught by the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAIRA HAIDER whose telephone number is (571)272-3553. The examiner can normally be reached on Monday-Friday from 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

Saira Haider
Examiner
Art Unit 1796